

## INTERNATIONAL SEARCH REPORT

Internati application No

PCT/GB 03/04377

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2002069364	A1	06-06-2002	DE 20012538 U1 EP 1174831 A2	12-10-2000 23-01-2002
US 5778071	A	07-07-1998	US 5546463 A AU 726397 B2 AU 4147097 A CA 2263991 A1 EP 0916210 A1 WO 9807255 A1 US 5878142 A	13-08-1996 09-11-2000 06-03-1998 19-02-1998 19-05-1999 19-02-1998 02-03-1999
FR 2793575	A	17-11-2000	FR 2793575 A1 AT 234486 T CN 1357130 T DE 60001650 D1 DE 60001650 T2 DK 1181663 T3 EP 1181663 A1 ES 2194724 T3 WO 0070533 A1	17-11-2000 15-03-2003 03-07-2002 17-04-2003 18-12-2003 14-07-2003 27-02-2002 01-12-2003 23-11-2000
WO 0031608	A	02-06-2000	AU 2008900 A BR 9915591 A CN 1333888 T EP 1145096 A2 JP 2002530772 T WO 0031608 A2	13-06-2000 07-08-2001 30-01-2002 17-10-2001 17-09-2002 02-06-2000

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ART 34 AMDT

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)



10/531431

Applicant's or agent's file reference 6W40023WO	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/GB 03/04377	International filing date (day/month/year) 09.10.2003	Priority date (day/month/year) 17.10.2002
International Patent Classification (IPC) or both national classification and IPC H04L29/06		
Applicant VODAFONE GROUP PLC. et al.		

- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.  
  
☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 8 sheets.

- This report contains indications relating to the following items:
  - ☒ Basis of the opinion
  - ☐ Priority
  - ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - ☐ Lack of unity of invention
  - ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - ☐ Certain documents cited
  - ☐ Certain defects in the international application
  - ☐ Certain observations on the international application

Date of submission of the demand  14.05.2004	Date of completion of this report  16.11.2004
Name and mailing address of the international preliminary examining authority:   European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer  Raposo Pires, J  Telephone No. +31 70 340-4334  

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Internal Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 778 071 A (AMORUSO VICTOR P ET AL) 7 July 1998 (1998-07-07)  figure 1E abstract column 2, line 23 -column 4, line 11 column 5, line 65 -column 6, line 11 column 7, line 37 - line 61 column 8, line 56 -column 18, line 9	1,2,5-8, 16-36, 38,39
A	---	3,4, 9-15,37, 40-42
A	FR 2 793 575 A (SCHLUMBERGER SYSTEMS & SERVICE) 17 November 2000 (2000-11-17) abstract figure 1 claim 1 page 2, line 15 -page 3, line 2 page 5, line 19 -page 6, line 2 page 7, line 3 - line 24 ---	1-42
A	WO 00 31608 A (ERICSSON TELEFON AB L M) 2 June 2000 (2000-06-02) page 2, line 13 - line 28 page 6, line 6 - line 16 page 7, line 24 -page 9, line 18 -----	1-42

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 H04L29/06 H04L12/22 G06F1/00

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According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F G07F H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X  A	US 2002/069364 A1 (DOSCH FRANZ A) 6 June 2002 (2002-06-06)  paragraph '0023! - paragraph '0040!  ---  -/--	1, 2, 5-8, 16-19, 21-36, 38-42  3, 4, 9-15, 20, 37

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*G\* document member of the same patent family

Date of the actual completion of the international search

25 March 2004

Date of mailing of the international search report

31/03/2004

Name and mailing address of the ISA

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**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/GB 03/04377**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-6, 8-45 as originally filed  
7 received on 23.09.2004 with letter of 20.09.2004

**Claims, Numbers**

1-42 received on 23.09.2004 with letter of 20.09.2004

**Drawings, Sheets**

1/13-13/13 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	3,4,9-15,20,37
	No: Claims	1,2,5-8,16-19,21-36,38-42
Inventive step (IS)	Yes: Claims	3,4,9-15,20,37
	No: Claims	1,2,5-8,16-19,21-36,38-42
Industrial applicability (IA)	Yes: Claims	1-42
	No: Claims	

2. Citations and explanations

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1 Reference is made to the following document:

D1: US 2002/069364 A1 (DOSCH FRANZ A) 6 June 2002

2 Claims 1 and 8 are not clear and concise in the sense of article 6 PCT.

2.1 Claims 1 and 8 have been drafted as two separate independent claims in the same category, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT.

3 The subject-matter of claims 1 and 8, the above clarity objections notwithstanding, is not new in the sense of Article 33(2) PCT.

3.1 The document **D1** discloses (the references in parentheses applying to this document) in terms of claim 1:

A device for connection to a data processing apparatus, the device including first coupling means for operative coupling to authentication storage means storing predetermined information relating to the authentication of a transaction with the data processing apparatus (paragraph [0024]); second coupling means for operative coupling to the data processing apparatus (paragraph [0025]), the device when operatively coupled to the data processing apparatus being responsive to an authentication process carried out via a communications link for authenticating the transaction, the authentication process involving the use of the predetermined information (paragraph [0027]); characterized by security data entry means for obtaining security data independently of the data processing apparatus (paragraph [0023]); and means for storing the security data temporarily (paragraphs [0026]).

Since all the features of claim 1 are known in combination from document D1, the subject-matter of claim 1 is not new (Article 33(2) PCT).

- 3.2 The document D1 discloses (the references in parentheses applying to this document) in terms of claim 8:

A device for connection to a data processing apparatus, the device including first coupling means for operative coupling to authentication storage means storing predetermined information relating to the authentication of a transaction with the data processing apparatus (paragraph [0024]); second coupling means for operative coupling to the data processing apparatus (paragraph [0025]); the device when operatively coupled to the data processing apparatus being responsive to an authentication process carried out via a communications link for authenticating the transaction, the authentication process involving the use of the predetermined configuration information (paragraph [0027]) and characterized by configuration means for selectively rendering the second coupling means available for coupling to the data processing apparatus (paragraph [0025]).

Since all the features of claim 8 are known in combination from document D1, the subject-matter of claim 8 is not new (Article 33(2) PCT).

- 4 Dependent claims 2,5-7,16-19,21-36,38-42 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty, see document D1 and the corresponding passages cited in the search report.
- 4.1 The combination of the features of dependent claims 3,4,9-15,20 and 37 is neither known from, nor rendered obvious by, the available prior art.

#### **Re Item VII**

#### **Certain defects in the international application**

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in D1 is not mentioned in the description, nor is D1 mentioned in the description.

In independent claim 8 the reference signs for the device (46;276;296) do not correspond to device but to security data entry means. Furthermore, the configuration means (6) do not have a corresponding drawing (6).



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authentication process can be carried out. In a case where the SIM is the SIM of a subscriber to a particular cellular telecommunications network, the authentication process can be carried out by that network.

It should be noted that the authentication process being described does not necessarily authenticate the human identity of the user. For example, cellular telecommunication networks have pre-pay subscribers who are issued with SIMs in return for pre-payment enabling them to make calls on the network. However, the identity of such pre-pay subscribers is not known (or not necessarily known) by the networks. Nevertheless, such a user cannot make use of the network until the network has authenticated that user's SIM – that is, has confirmed that such user is a particular user who has a particular pre-paid account with the network. The SIMs of such pre-paid users or subscribers could equally well be used (in the manner described) in or in association with data processing apparatus or computers, for the purposes of authenticating that user.

The SIM need not take the form of a physical (and removable) smart card but instead can be simulated by being embedded in the data processing apparatus or computer in the form of software or represented as a chip for example.

It may be desirable to be able to change the authentication information on the SIM (or simulated SIM) to take account of changed circumstances. For example, the SIM may be a SIM registered with a particular cellular telecommunications network – a network applicable to the country or region where the data processing apparatus or computer is to be used. However, circumstances may arise (for example, the apparatus or the computer is physically moved to a different country or region) in which it is desirable or necessary to re-register the SIM with a different cellular telecommunications network. Ways in which this can be done are disclosed in our co-pending United Kingdom patent applications Nos. 0118406.8, 0122712.3 and 0130790.9 and in our corresponding PCT applications Nos. GB02/003265, GB02/003260 and GB02/003252. As described therein

**CLAIMS**

1. A device for connection to a data processing apparatus, the device including first coupling means for operative coupling to authentication storage means storing predetermined information relating to the authentication of a transaction with the data processing apparatus; second coupling means for operative coupling to the data processing apparatus, the device when operatively coupled to the data processing apparatus being responsive to an authentication process carried out via a communications link for authenticating the transaction, the authentication process involving the use of the predetermined information; security data entry means for obtaining security data independently of the data processing apparatus; and means for storing the security data temporarily.
2. The device of claim 1, wherein the security data is stored temporarily by means of a transient power source.
3. The device of claim 2, wherein the transient power source comprises piezo electric means.
4. The device of claim 3, wherein the piezo electric means comprises one or more piezo electric cells.
5. The device of claim 2,3 or 4, wherein the transient power source is charged by the security data entry means.
6. The device of claim 2,3,4 or 5, wherein the transient power source comprises a rechargeable battery.

7. The device of any one of claims 1 to 6, comprising means for analysing the entered security data for determining whether to allow access to the predetermined information.

8. A device for connection to a data processing apparatus, the device including first coupling means for operative coupling to authentication storage means storing predetermined information relating to the authentication of a transaction with the data processing apparatus; second coupling means for operative coupling to the data processing apparatus; and configuration means for selectively rendering the second coupling means available for coupling to the data processing apparatus, the device when operatively coupled to the data processing apparatus being responsive to an authentication process carried out via a communications link for authenticating the transaction, the authentication process involving the use of the predetermined configuration information.

9. The device of claim 8, wherein the configuration means comprises means for selectively making the second coupling means available externally of the device housing.

10. The device of claim 9, wherein the configuration means comprises a removable cap.

11. The device of claim 9, wherein the configuration means comprises a closure member coupled to and moveable with respect to the housing for selectively closing an aperture in the housing.

12. The device of claim 11, comprising interconnection means for connecting the closure member and the second coupling means, the arrangement being such that, as the closure member is moved to open the aperture, the second coupling means emerges from the aperture.

13. The device of claim 8, comprising a knob mounted on the device housing for

rotation with respect thereto, and means for converting rotation of said knob into linear movement of the second coupling means such that rotation of said knob in a first direction causes the second coupling means to emerge from an aperture in the device housing and rotation of said knob in a second direction causes the second coupling means to be retracted through said aperture.

14. The device of claim 9, wherein the device housing includes two parts moveable with respect to one another between a first arrangement where the second coupling means is contained within the housing and a second arrangement where the second coupling means is exposed for connection to the data processing apparatus.

15. The device of claim 14, wherein the two parts are pivotally coupled together.

16. The device of any one of claims 8 to 15, comprising security data entry means for obtaining security data independently of the data processing apparatus, and means for analysing the entered security data for determining whether to allow access to the predetermined information.

17. The device of any one of claims 8 to 15, comprising security data entry means for obtaining security data independently of the data processing apparatus; and means for storing the security data temporarily.

18. The device of any one of claims 1 to 17, wherein the device controls access to the predetermined information.

19. The device of any one of claims 1 to 7 and 16 to 18, wherein the security data entry means comprises alphanumeric data entry means.

20. The device of any one of claims 1 to 7 and 16 to 19, wherein the security data

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entry means comprises a keypad.

21. The device of any one of claims 1 to 7 and 16 to 20, wherein the security data comprise a Personal Identification Number (PIN) and analysing means compares the PIN obtained by the security data means with a PIN stored on the authentication storage means and only allows access to the predetermined information when the respective PINs match.

22. The device of any one of the preceding claims, comprising a display for displaying security information.

23. The device of any one of the preceding claims, comprising a data processing module for controlling the communication with the data processing apparatus.

24. The device of claim 23, wherein the data processing module of the device is configured for communicating with a corresponding data processing module of the data processing apparatus.

25. The device of claim 24, wherein communication between the authentication storage means and the data processing apparatus is performed via the respective data processing modules.

26. The device of claim 23, 24 or 25, wherein the data processing module of the device includes means for decrypting encrypted data received from the data processing module of the data processing apparatus.

27. The device of claim 23, 24, 25 or 26, wherein the data processing module of the device includes means for encrypting data transmitted to the data processing module of the data processing apparatus.

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28. The device of claims 26 or 27, wherein the respective data processing modules comprise a key for allowing encryption and/or decryption of data.
29. The device of claim 28, wherein the key comprises a shared secret key for each of the respective data processing modules.
30. The device of any one of the preceding claims, wherein the device is operatively coupleable to one of more of a plurality of said authentication storage means, each of which is registerable with a common telecommunication system, and wherein the authentication process is performed by a communications link with the telecommunications system.
31. The device of claim 30, in which the predetermined authentication information stored by each authentication storage means corresponds to information which is used to authenticate a user of that authentication storage means in relation to the telecommunications system.
32. The device of claim 31, in which each user is authenticated in the telecommunications system by means of the use of a smart card or subscriber identity module (e.g. SIM), and in which the authentication storage means respective to that user corresponds to or simulates the smart card for that user.
33. The device of any one of claims 1 to 32, in which the transaction is a transaction involving use of the data processing functions of the data processing apparatus.
34. The device of any one of claims 1 to 33, in which the authentication storage means is specific to that device.

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35. The device of any one of claims 1 to 34, in which the authentication process involves the sending of a message and the generation of a response dependent on the message and the predetermined information.

36. The device of any one of claims 30 to 35, wherein the telecommunications system includes means for levying a charge for the transaction when authorised.

37. The device for any one of claims 1 to 7, 16 and 17, wherein the security data entry means comprises a rotary knob.

38. The device of any one of the preceding claims in combination with the data processing apparatus.

39. The device of any one of the preceding claims in combination with the telecommunications system.

40. The device of any one the preceding claims, wherein the authentication storage means communicates wirelessly to authenticate the transaction.

41. The device of any one the preceding claims, wherein the authentication storage means comprises a smart card or SIM which authenticates the transaction when the smart card or SIM is operable in a mobile terminal.

42. The device of any one the preceding claims, wherein the authentication storage means comprises a smart card or SIM which is further operable to authenticate a mobile terminal for use in the system.